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ABSTRACT

The Student Accountability Model (SAM) was developed by a consortium of 12 members, to provide a system of procedures for identifying and describing California community college occupational students and for obtaining information about them after they leave college. The two components of the model are the Student Accounting Component (Classification of Occupational Courses, Identification of Occupational Student Majors, and Data for Voc-Ed For CCOE48) and the Student Followup Component (Classification of Previous Semester Students, Followup Procedures for Groups--selection of group(s), preparation of students, study design--Data for Voc-Ed Form CCOE45, and Data for Program Evaluation and Planning). Each of the tasks involved in the two components is discussed. (Appendixes present the following: a discussion of Sampling in Followup Studies, Sample Instruments for Followup Preparation (In-Class Questionnaire, EXIT Interview Form, and Followup Alert Letter), and a list of members of the Project Consortium. (DB)

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STUDENT ACCOUNTABILITY MODEL

PROCEDURES MANUAL

Vocational Education, Part C
Project #19-34741-C3-235

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August, 1974

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P R E F A C E

This manual* is a product of 1973-74 Vocational Education Part C, Research Project #19-64741-C3-235, "Improving Occupational Student Follow-up in California Community Colleges." The major thrust of that endeavor was the construction of a model to accomplish the purpose stated in the project title.

It became evident early in the project that a fundamental component in the model would have to be a uniform method for classifying occupational courses and identifying occupational majors so that non-continuing students could be categorized for various approaches to follow-up. This manual describes recommended procedures for accomplishing these objectives and suggests methods for obtaining useful information about occupational students during and after their stay in college.

The model was developed by a consortium of twelve leaders in California Community Colleges, including occupational and general administrators, researchers, and data processing specialists. Input was solicited from other colleges and from staff of the Chancellor's Office.

It is hoped that the model will be of assistance to the colleges in (1) evaluating and planning their occupational programs and in (2) completing required enrollment and follow-up forms related to vocational education.

BKG

* A separate manual "Flowcharts and Programs for S.A.M." is available.

STEPS IN IMPLEMENTING OCCUPATIONAL STUDENT ACCOUNTABILITY MODEL MODEL (SAM)

TASK	TIME	PROCEDURES MANUAL REFERENCES
I. Accounting Component		
1. Classify Courses Identify all occupational courses Label each with appropriate CID or USOE (VEA) number Label each with priority letter	Prior to each semester	I-A p. 4-7, 10
2. Identify student occupational majors Examine student's program Place student in Class 1,2,3, or 4 Identify major by CID or USOE code for each student in Class 1,2,3	Census week, each semester	I-B p. 8-10
3. Prepare student Occupational Majors List (OML)	Census week, each semester	I-C p. 11
4. Prepare annotated OML (or expanded SMF) Merge OML with Student Master File (SMF) to identify desired student characteristics with major and class	Shortly after census week, each semester	I-C p. 11-14
5. Make counts for CCOE48* Make Fall counts and store; make Spring counts; get total unduplicated counts by totaling Fall and Spring counts, eliminating Fall figures for students enrolled both semesters	Semester counts shortly after census week, each semester, Total counts after Spring census week	I-C p. 11-14
II. Follow-up Component		
6. Identify non-continuing students Match current SMF against previous semester SMF (as of census week)	Census week, each semester	II-A p. 15

*Alternative method for step (5)
Make Spring counts; add Fall counts for non-continuing students only (requires Step (6))

TASK	TIME	PROCEDURES MANUAL REFERENCES
7. Prepare Follow-up Matrix Horizontal position (Class 1,2,3, 4) determined by step 2 above Vertical position (G,C,A,P,N) determined by accomplishment during previous semester Each non-continuing student placed in appropriate cell of matrix	Shortly after census week, each semester	II-A p. 15-17 II-B p. 21
8. Select cells of matrix for follow-up Select according to college needs; must include groups for CCOE45	Shortly after census week, each semester	II-B p. 18-21 II-D p. 31
9. Perform follow-up procedures Design study, collect and analyze data, disseminate findings	Shortly after census week, Fall semester (also Spring semester if desired)	II-B p. 21-26 II-C p. 26-31 II-D p. 31-36
10. Complete CCOE45 Total counts for Fall and Spring	November, each year	II-C p. 26-30

* * * * * * * * * *

STUDENT ACCOUNTABILITY MODEL

INTRODUCTION

The model described herein was developed to accomplish the following general purposes:

To provide a system of procedures for identifying and describing California community college occupational students and for obtaining information about them after they leave college, in order to satisfy two needs:

(1) completion of reporting forms required for governmental agencies, and

(2) program evaluation and planning

Visits to a statewide sampling of colleges during the early planning stages revealed a wide variety of practices in obtaining quantitative information regarding occupational program enrollments and subsequent job placements. These visits also produced data, and opinions, concerning needs and operating constraints within individual colleges. As a result of these visits, the following sets of guidelines and assumptions were developed as bases for construction of the model.

Guidelines for the System: Essential

(1) System must be adaptable to any California community college and to all occupational programs offered by the college.

(2) Operation of system must be sufficiently simple that outside expertise is not required after initial implementation.

(3) System must lend itself to electronic data processing but be adaptable to manual operations.

(4) System must maximize the use of current college staff and minimize the necessity for hiring additional personnel.

(5) System must be ongoing, not "one-shot."

(6) Any alternative sub-systems must provide substantially equivalent information.

(7) System must provide necessary information for Vocational Education enrollment and follow-up forms with a high level of accuracy and on time.

Guidelines for the System: Essential (continued)

(8) System must provide pertinent evaluation and planning information to occupational administrators and faculty.

(9) System must indicate enrollments as of the census week in the semester (quarter) concerned, but must also provide flexibility for specially scheduled courses.

(10) Data collection instruments must be easily readable, require a minimum of time for completion and be in a format easily adaptable to electronic data processing.

Guidelines for the System: Highly Desirable

System should:

(1) be expandable to include students other than occupational students.

(2) provide for employer as well as employee input.

(3) provide for long-term as well as short-term follow-up.

(4) require a minimum of effort for colleges to "retool" from existing systems.

(5) not in any way imply that other methods of program evaluation are less important.

(6) build on existing research information.

(7) adapt with minimum difficulty to changes in reporting requirements.

(8) provide estimates of any sampling and/or response bias.

(9) provide additional information useful to college counseling staff.

(10) provide additional information useful to college placement office.

Some Assumptions and Inferences

(1) Colleges need a system such as proposed in this project.
Inference: Colleges will be committed to participation and support of the project.

(2) No system for identifying student majors can be 100% accurate.
Inference: Project should determine what accuracy is reasonable and model should assure that accuracy.

Some Assumptions and Inferences (continued)

(3) Difficulty in student major identification decreases the longer the student stays in college.
Inference: Target accuracy rates should vary with groups involved.

(4) No sizable follow-up procedures can produce 100% response.
Inference: Project should determine what response rates are acceptable and under what circumstances.

(5) Difficulty in contacting former students increases the longer they are away from college.
Inference: Target response rates should be expected to vary with groups involved.

(6) A workable system requires input from those "close to the scene."
Inference: Occupational faculty, department or division chairmen, and counselors should be involved in the system.

(7) Follow-up information about students who have completed considerable work at the college is more useful in program evaluating and planning than that about students who have completed little or no work.
Inference: While short-tenure students should certainly not be ignored, more effort should be expended on the follow-up of long-tenure students.

(8) Specific objectives of follow-up studies may differ among colleges and among groups within a college.
Inference: Specific objectives for follow-up studies should be determined before the study design is finalized; over-all system must be flexible enough to adapt to differing objectives.

(9) Student attitude is an important factor in follow-up response rates.
Inference: Efforts should be made to prepare students for follow-up requests, preferably before they leave the college.

(10) A large follow-up response from a representative sample is preferable to a small biased response from an entire group.
Inference: Repeated efforts to obtain responses should be made.

To meet these guidelines and assumptions, the model was envisioned as having two components: (1) the Student Accounting Component, in which occupational students are operationally defined and classified according to criteria which are both adequate and simple to apply, and (2) the Student Follow-up Component, in which occupational students no longer in college are categorized and procedures recommended for obtaining information about them, with details of procedure depending on the category.

I. Student Accounting Component

In the Student Accounting Component, occupational courses are classified and prioritized, and student majors are defined according to the occupational courses in which they enroll.

The most critical aspect, therefore, of the entire model is the careful classification of occupational courses.

I-A. Classification of Occupational Courses

An occupational course is defined as one which is (all three).

(1) intended to develop skills and related knowledge needed for job performance

(2) part of the course sequence of an occupational program offered by the college

(3) designed primarily for job preparation and/or job upgrading or updating and not for general education purposes

Prior to each semester, the occupational administrator (or his delegate) should examine all courses offered by occupational departments, number each with an appropriate CID (or USOE) number*, and follow (or precede) the number with a priority letter, as follows:

Priority "A" - Apprenticeship

Course is an apprenticeship course

Priority "B" - Advanced occupational

Course is offered in one specific occupational area only and clearly labels its taker as a major in this area. Priority B courses will generally (but not necessarily) be those taken by students in the advanced stages of their occupational programs.

* Numbers should be assigned, according to judgment and experience of administrator, to specific area most consistent with content of the course.
CID: Classification of Instructional Disciplines, State Chancellor's Office
USOE: U.S. Office of Educational Vocational Education Classification

Classification of Occupational Courses (continued)

Priority "C" - Clearly occupational

Course is generally offered in several specific occupational majors within a broad area and is of difficulty level sufficient to detract "drop-ins". Priority C courses will generally (but not necessarily) be taken by students in the middle stages of their occupational programs.

Priority "D" - Possibly occupational

Course is introductory level occupational or is primarily a service (or survey) course for other occupational programs. Priority D courses may be taken by non-occupational as well as occupational majors.

For borderline courses (between C and D), it is suggested that the deciding factor should be an estimate (based on judgment and experience) of the number of students taking the course whose major is judged to be occupational. If the number is estimated to be 75% or more of the total, the course should be identified as Priority C, otherwise Priority D.

Priority "E" - Non-occupational

Although offered by an occupational department, course is designed for non-occupational majors who desire acquaintance with the field as part of their general education.

In addition to the above, letters F and beyond may be used to identify special courses, e.g., useful homemaking, working experience. It is suggested that work experience be given a higher occupational priority only if it is clearly part of an occupational curriculum.

Also, it should be noted that in this model there is no operational distinction between A and B priority courses. Separate identification is included for those colleges who may wish to study their apprenticeship courses separately.

In making decisions as to which priority letter to assign to a course, note that there are three possible factors which might be considered:

(1) the degree to which the course identifies its taker as an occupational major

(2) level of the course in an occupational program

(3) percent of students taking the course who are judged occupational majors

It is recommended that the following guidelines be used, and in the order indicated:

FACTOR	PRIORITY LEVEL			
	A or B	C	D	E
(1) Ability to identify major	Clearly labels taker as a major in specific occupational program	Indicates the taker is a major in one of several programs in a broad occupational area	Suggests that taker is possibly an occupational major, but area is unknown	Indicates taker to be a non-occupational major
(2) Course level	Advanced occupational (B) Apprenticeship (A)	Second level occupational	Introductory occupational	Introductory Non-occupational
(3) Expected number of occupational majors in class	100%	75% or more	Below 75% but above 25%	25% or below

Following are some examples (for illustrative purposes only) of possible classifications of courses:

A. Apprenticeship Courses

Carpentry, Plumbing, Machine Shop

B. Courses Which Indicate a Specific Major
(Advanced occupational)

Dental Pathology, Advanced Video Tape, Advanced Applied Acting, Advanced Legal Secretarial Procedures, Contact Lens Laboratory, Advanced Radiologic Technology, Fire Hydraulics, Livestock, and Dairy Selections, Real Estate Finance, Cost Accounting

C. Courses Which Indicate a Broad Area Major
(Clearly occupational)

AREA*		COURSE
01	Agricultural	Soils
04	Distributive Education	Credits and Collections, Principles of Advertising, Air Transportation
07	Health Occupations	Clinical Techniques, Principles of Patient Care
09	Home Economics	Food and Nutrition, Sanitation/Safety
14	Office Occupations	Shorthand, Small Business Management, Advanced Typing
16	Technical Education	Technical Engineering, Vacuum Tube Theory
17	Trade and Industrial	Fundamentals of Air Conditioning Basic Electricity

D. Courses Which May Indicate Occupational Major
(Possibly occupational)

Technical Mathematics, Graphic Communications, Elementary Mechanical Principles, Fundamentals of Electronics, Typing (Beginning or Intermediate), Accounting (Beginning).

E. Survey of Exploratory Courses (Not occupational)

Introduction to Home Economics, Introduction to Business, Introduction to the Theatre.

It should be emphasized that the above are illustrations only. Course title alone is not sufficient to determine course priority as courses with the same title but at different colleges may be quite different. Guidelines stated above should be used.

* Broad areas need not be limited to the Voc-Ed categories illustrated here.

I-B Identification of Occupational Student Majors

For the planning and evaluating purposes of this model, student majors are classified four ways: (see diagram).

Class 1 - Occupational major, specific major determined.

All students enrolled in one or more courses labeled A or B.

Class 2 - Occupational major, broad area determined.

All students who are not enrolled in any course labeled A or B, but are enrolled in one or more courses labeled C.

Class 3 - Occupational major, area not determined.

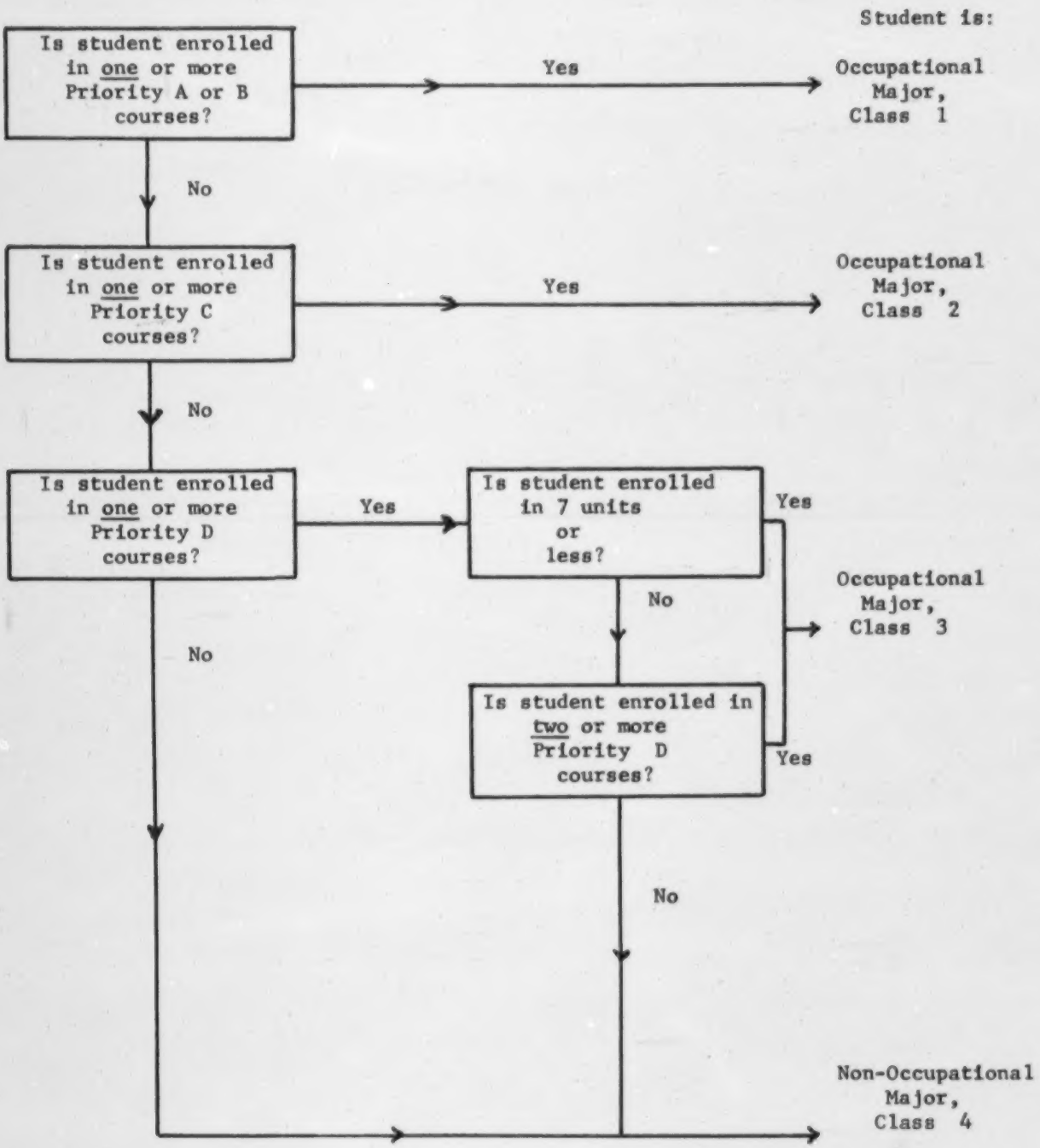
All students who are not enrolled in any course labeled A, B, or C above, but who are enrolled either in (a) <u>one</u> course labeled D and a total of 7 units or less, or (b) <u>two</u> or more courses labeled D.

Class 4 - Non-occupational major.

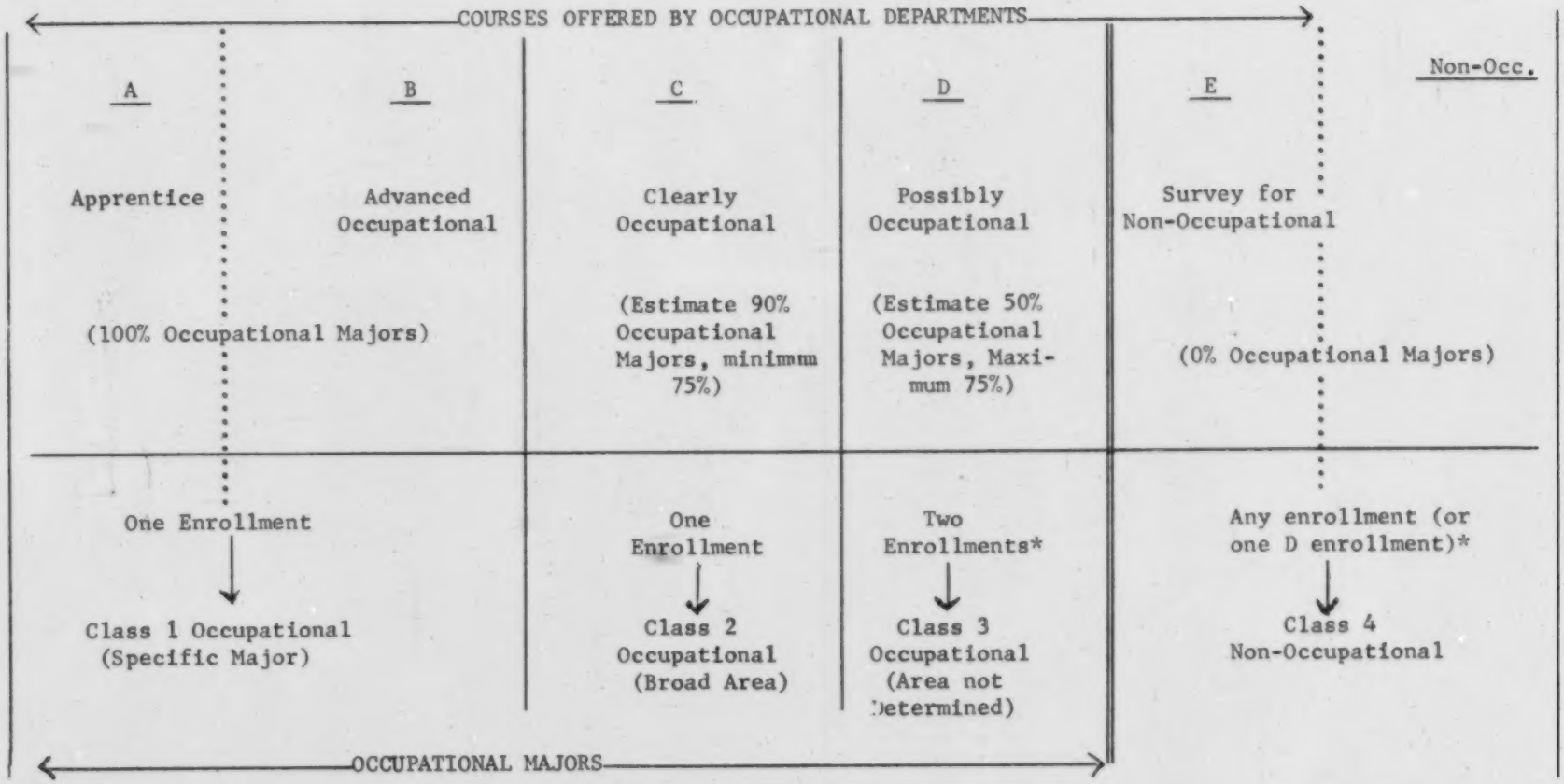
All students not classified above.

Note that part-time, full-time or day, evening distinctions are not made. Procedures for identification of student majors should be applicable to all these groupings.

DETERMINATION OF STUDENT MAJOR



CLASSIFICATION OF COURSES



DETERMINATION OF STUDENT MAJOR

* One D enrollment qualifies a student for Class 3 if his total enrollment is 7 units or less

I-C. Data for Voc-Ed Form CCOE48

For the evaluative and planning purposes of the model, occupational majors in Classes 1, 2, and 3 will be considered according to their class designation (see Section II-D).

For the purposes of the CCOE48 (Number of Students in Occupational Education) reporting form, the total of all occupational majors (Class 1, 2, or 3) should be reported in the area indicated by the CID* or USOE number. If a student's major is not uniquely determined because of enrollment in two or more courses of the same priority but with different numbers, the college or district should determine a method for making the assignment. It is suggested that students be contacted (through a teacher or counselor) requesting that they indicate a choice, or, if the numbers are not too large, that they be arbitrarily placed by the occupational administrator, or by arbitrary computer assignment.

An unduplicated listing of occupational students (OML) and their majors can now be prepared (shortly after census week) for each semester (or quarter).

It is assumed in this model that there exists (for each semester or quarter) a periodically updated student master file (SMF) indicating characteristics of students necessary for identification of special groups. For completion of the Vocational Education forms considered in this manual, the SMF should contain the items indicated in the table showing minimum elements needed (p. 14). Not all colleges will have all these characteristics indicated on the SMF. It is suggested that these missing items be put on the file where possible. For those items which can not be put on the SMF, calculations (or estimates) will have to be provided by whatever means are available and feasible.

The following procedures** are required to obtain the numbers necessary for the CCOE48 form: (see diagram).

(1) merge the Fall SMF and the Fall OML to obtain counts for Fall
(2) merge the Spring SMF and the Spring OML to obtain counts for Spring
(3) to obtain total (unduplicated) counts, add Fall and Spring counts, subtract the Fall figures for students on both semester lists (see diagram).

(continued on next page)

* CCOE48 requires USOE program numbers. Colleges using CID numbers can adjust by using CID-USOE equivalency table provided by the Chancellor's Office.

** Additional (but similar) procedures are required for colleges on the quarter system.

I-C Data for Voc-Ed Form CCOE48 (continued)

In obtaining unduplicated counts for students enrolled in both Fall and Spring semesters, the following is recommended:

(a) if the student's major class (1, 2, or 3) is the same for both Fall and Spring, but his (or her) USOE numbers are not the same, the Spring USOE number should be the one used.

(b) if the student's major class assignment for Fall differs from that for Spring, the USOE program number for the higher ranked class (lower numerically) should be the one used.

Several examples follow:

Student	FALL		SPRING		USOE Program Code to be used in CCOE48
	Class	USOE Prog. No.	Class	USOE Prog. No.	
A	1	16.0399	4	Non-occup.	16.0399
B	4	Non-occup.	3	17.1501	17.1501
C	2	17.0401	3	17.04	17.0401
D	3	04.01	3	16.01	16.01
E	3	14.01	1	14.0105	14.0105
F	2	04.19	2	01.03	01.03
G	1	07.0301	2	07.07	07.0301

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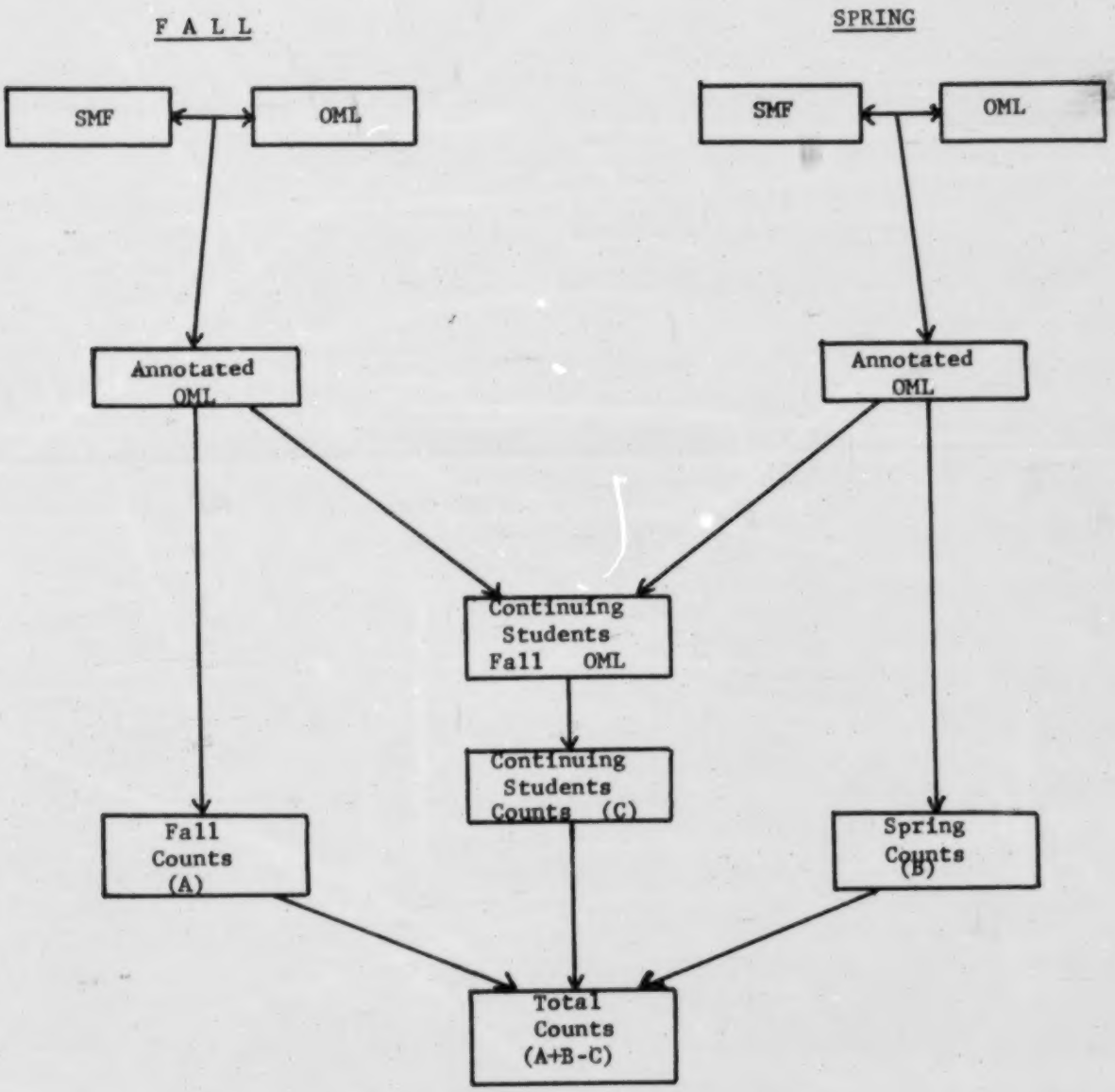
DATA FOR CCOE48 (SEMESTER SYSTEM)



MINIMUM ELEMENTS NEEDED FOR STUDENT MASTER FILE (SMF)
(for completion of Voc-Ed forms)

1. Name
2. Address (including telephone number)
3. Social Security number (or other ID #)
4. Birthdate
5. Sex
6. Current course enrollments (updated during semester)
7. Course grades (at end of semester)
8. Total cumulative units completed (to identify 1st year, 2nd year, other)
9. Status: regular, adult preparatory, adult supplement
10. Identifiers for the following:
    - (a) disadvantaged
    - (b) handicapped
    - (c) minority group
    - (d) cooperative work experience
    - (e) Part H Work Study
    - (f) Part D Exemplary
11. Date Associate Degree awarded (if any)
12. Date program certificate received (if any)

II. Student Follow-up Component

In the Student Follow-up Component, non-continuing students are classified two ways: (1) according to their major class, as described earlier, and (2) according to their accomplishment during the previous semester. Thus a two way "follow-up matrix" is obtained. Procedures for follow-up are recommended, with procedural specifics dependent upon the student's location in the follow-up matrix.

II-A Classification of Previous Semester Students

After census week, current semester SMF and previous semester SMF (end of semester) should be matched. The following definitions pertain:

Continuing student:	student named on both lists
Non-continuing student:	student named on previous list but not on current list

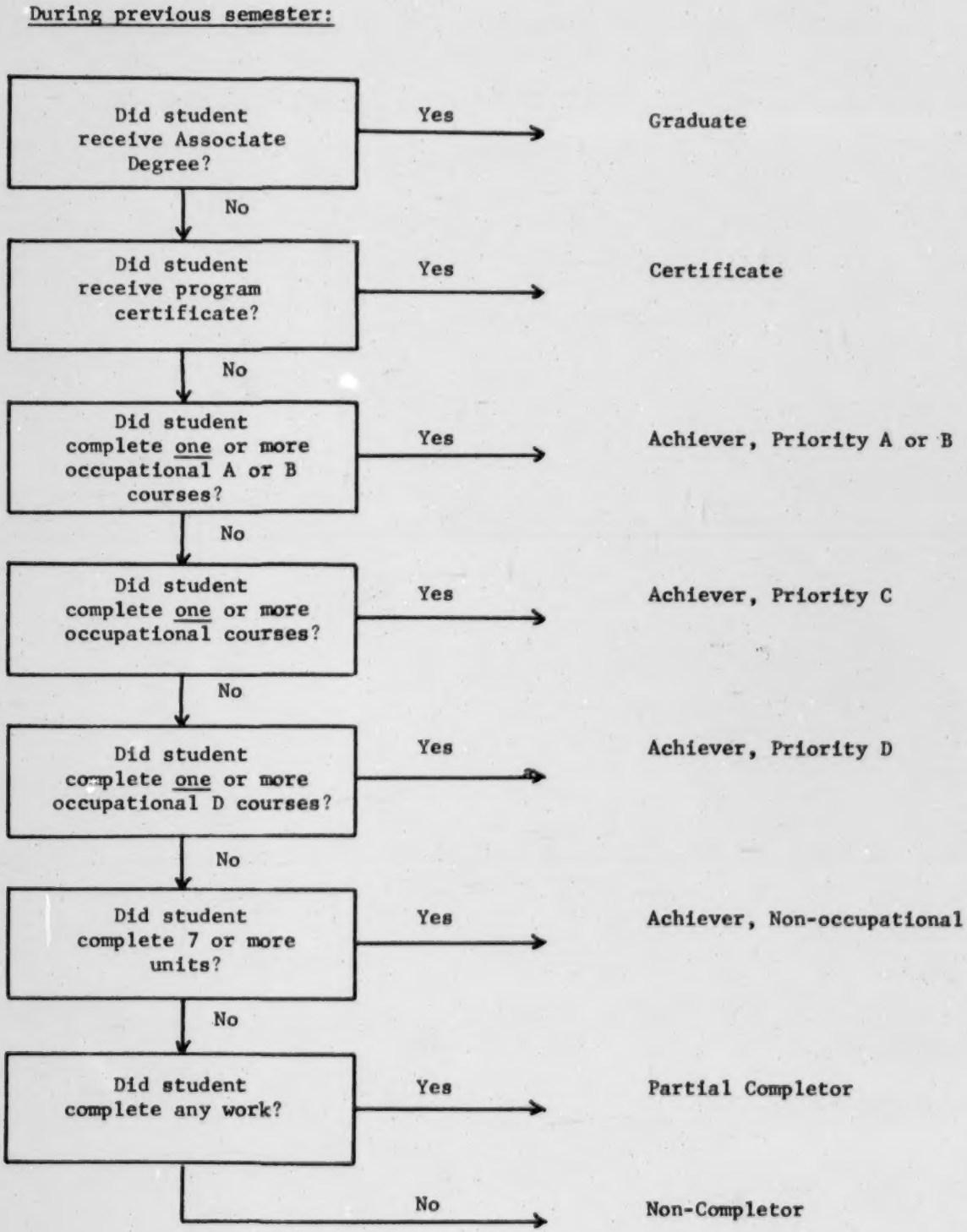
Non-continuing students are further classified as one of the following, depending on accomplishment during the previous semester:

Graduate (G).....	received Associate Degree
Certificate (C)	received program certificate
Achiever (A)	does not qualify as graduate or certificate but:
Priority A or B	completed one or more priority A or B courses
Priority C	completed one or more C priority courses (no A or B)
Priority D	completed one or more D courses (no A, B, or C)
Non-occupational*.....	completed seven or more units (no A, B, C, or D)
Partial Completor (P).....	completed some work but does not qualify as graduate, certificate, or achiever
Non-completor (N).....	does not qualify for any of the above

For the purposes of Form CCOE45, (Follow-up Students Completing Preparatory Occupational Education Programs), Graduates, Certificates and Priority A or B Achievers will be considered to have completed their programs (Column 2). Priority C Achievers and Priority A or B Partial Completors will be considered to have left the program with marketable skills (Column 13). Numbers obtained for Fall and Spring are simply added to obtain year totals.

* Non-occupational majors are not included in the model. Inclusion here is for completion and is a suggestion only.

CLASSIFICATION OF NON-CONTINUING STUDENTS
(Flow Chart)



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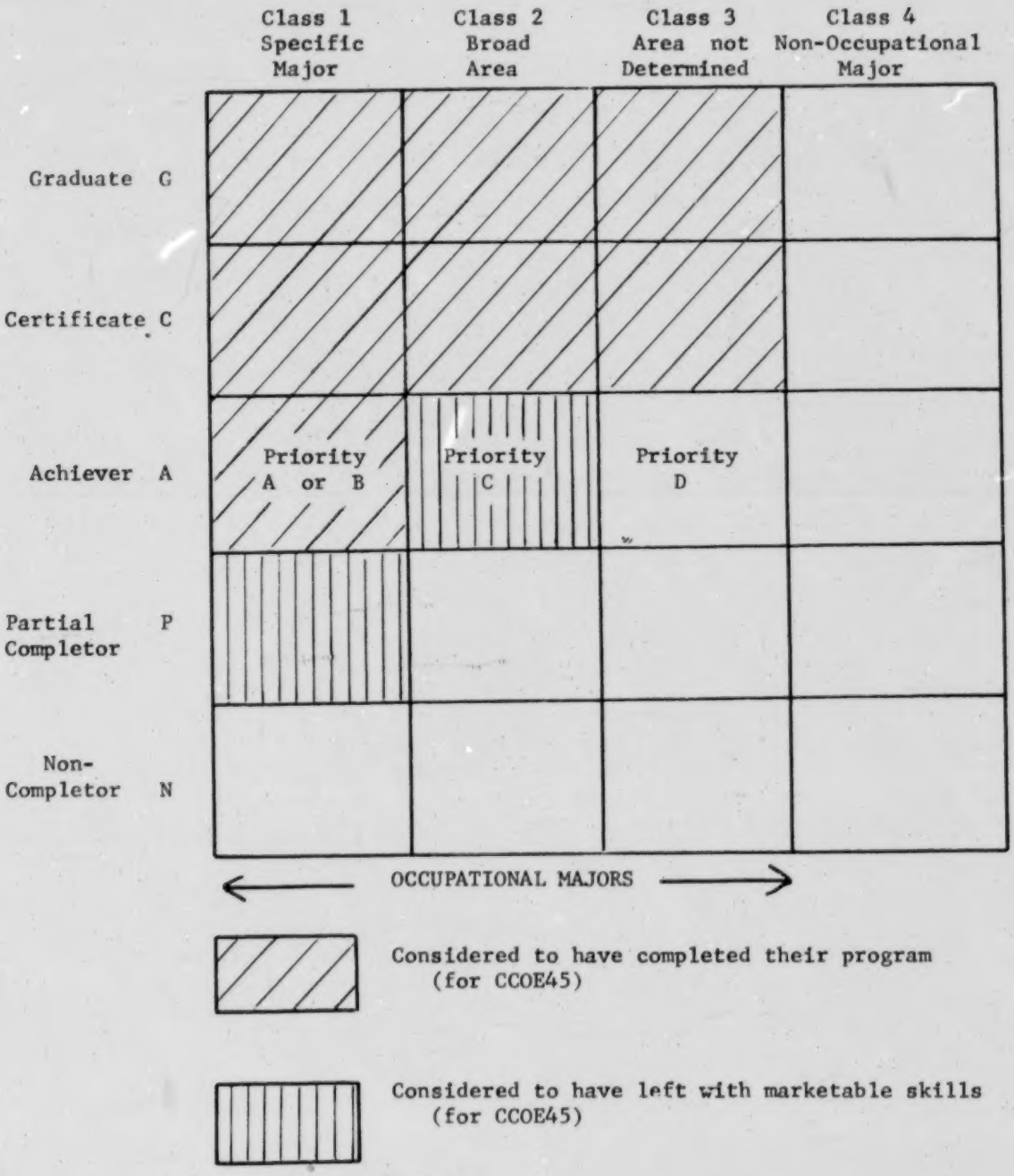
II A-1 Classification of Groups for Follow-up:

The following groups can now be identified for appropriate follow-up:



II-B. Follow-up Procedures for Groups Identified in II-A

II-B-1 Selection of group(s) to be followed:

Choice of group(s) to be followed will depend on the purposes for which the study is made. As stated earlier, in the model two purposes are considered:

(1) completion of reporting forms required for governmental agencies, and

(2) program evaluation and planning

For the first of these purposes (specifically CCOE45), all occupational graduates, certificates, and achievers Class 1 must be included (also, achievers class 2 and partial completors Class 1 must be counted).

For the second purpose, any or all categories may be included, depending on the needs or desires of the college at the time.

Keeping in mind the guidelines for the model stated earlier, following is an example of a possible pattern for short range follow-up for a large college:

Category	Class	No. to Contact	How Often
Graduates	1,2,3	All	Annually **
Graduates	4	All	Biannually
Certificates	1,2(3,4)*	All	Annually **
Achievers	1,2	All	Annually **
Achievers	3,4	Sample	Biannually
Partial Completors	1,2,3,4	Sample	Biannually
Non-Completors	1,2,3,4	Sample	Biannually

* very likely no students will fall into these catagories

It is also possible (and probably advisable) for further breakdowns to be made for detailed indepth follow-up studies. For example, one might wish to obtain more detailed follow-up information on, say, electronics graduates one year, allied health graduates the next year, etc. If it is not possible to make studies on all non-continuing students routinely, such procedures could provide balanced information over a period of a few years.

** Annual follow-up is required by CCOE45. More detailed study could be scheduled less often.

Responsibility for follow-up will depend upon the general assignment of responsibilities at the college. At some colleges, it may be appropriate for the Occupational Dean's Office, at others the Research Office, at others the Counseling or Placement Office. Where specific program majors are to be probed in depth, it is often appropriate for faculty or department chairmen to conduct the study. If sampling is to be used, someone with a clear understanding of bias and sampling error should be involved.

It should be emphasized that the above pattern is presented as only one of many possible patterns. It should also be emphasized that without a carefully designed pattern and commitment to its implementation, follow-up is likely to be haphazard and piecemeal, with a low probability of producing solid, useful information for program planning and modification.

II-B-2 Preparation of Students for Follow-up

Researchers who have performed follow-up studies consistently report that preparation of students while still in college provides measurable and significant improvement in (1) response rate to mailed questionnaires, and (2) completeness and accuracy of responses. Efforts are apparently especially needed for young students and for non-completors.

One writer has characterized two types of recommended preparation:

(a) mechanical, involving such items as verifying and/or updating addresses, completing EXIT forms, and generally making sure that pertinent information is on file at the college while the student is there to provide it, and

(b) psychological, or "conditioning" the student to respond to future requests for information.

Following are some suggestions:

(1) to alert Class 1 or Class 2 majors (all categories except N), allow 10-15 minutes of time in each A, B, or C priority class shortly before the end of the semester and

(a) inform students of possible future contacts, emphasizing

1. college interest in individual's opinions
2. requirements for obtaining funds
3. opportunity to assist future students
4. no individual identification in any published reports

(b) suggest student include college among people to be notified when he changes address -- point out various benefits to him when college can contact him easily.

(c) if possible show student copy of questionnaire he may receive.

(d) obtain information about plans for next semester, current address and phone number, and address of someone who will always know student's address (see Sample In-Class Questionnaire).

Note that it is possible to obtain considerable "follow-up" information before the student leaves college. For example, students who already have jobs lined up can provide CCOE45 information and thus be excluded from later mailings for that purpose.

(2) to alert Non-Completors, institute a procedure requiring Exit Interviews. At the time the student withdraws obtain pertinent information and alert student to possible follow-up requests. (see Sample Exit Interview form). Although some students will just disappear, this number can be minimized by consistent college-wide efforts, e.g., announcements in registration packet, college newspaper, bulletin boards, etc. urging students to protect their records by following appropriate withdrawal procedures.

(3) to alert others, send letter as soon as non-attendance is determined, explaining importance of feedback information and requesting student to (a) keep college posted as to his address, and (b) respond when contacted (see Follow-up Alert letter).

As in other aspects of the model, individual colleges and individual programs within a college may require different approaches. The above are listed as suggestions to be tried when deemed appropriate, but the principle of preparation of students for follow-up while still in college has been demonstrated to be sound and it is strongly recommended that various procedures be tried with enthusiasm and creativity.

II-B-3 Study Design

It is obvious that one particular detailed plan for following non-continuing students cannot suffice for all students in all programs in all colleges at all times.

Study Design (continued)

However, research and experience indicate that the general procedures indicated in the accompanying flowchart are usually appropriate and feasible. Specific procedures for each step in the flowchart will depend upon many things, including numbers of students involved, available resources, time frame limitations, types of information desired, and, in general, the purpose of the particular study.

Notes on General Flowchart for Follow-up

(1) Prepare Follow-up Matrix

The follow-up matrix described in Section II-A can be prepared shortly after census week in any semester (or quarter), as soon as non-continuing students can be identified. The student's major class (horizontal in the matrix) should have been identified during the previous semester, and his non-continuing status (vertical in the matrix) is determined by his accomplishment that semester. Each student can now be identified by a number (1, 2, 3, or 4) indicating his major class and by a letter (G, C, A, P, N) indicating his non-continuing status. There are thus twenty cells in the matrix into which a student could be placed, and a simple count would produce the number of students falling into each. Depending upon the college's long-range follow-up plans, it may or may not be advisable to analyze in further detail (by specific major) the distributions in the various cells.

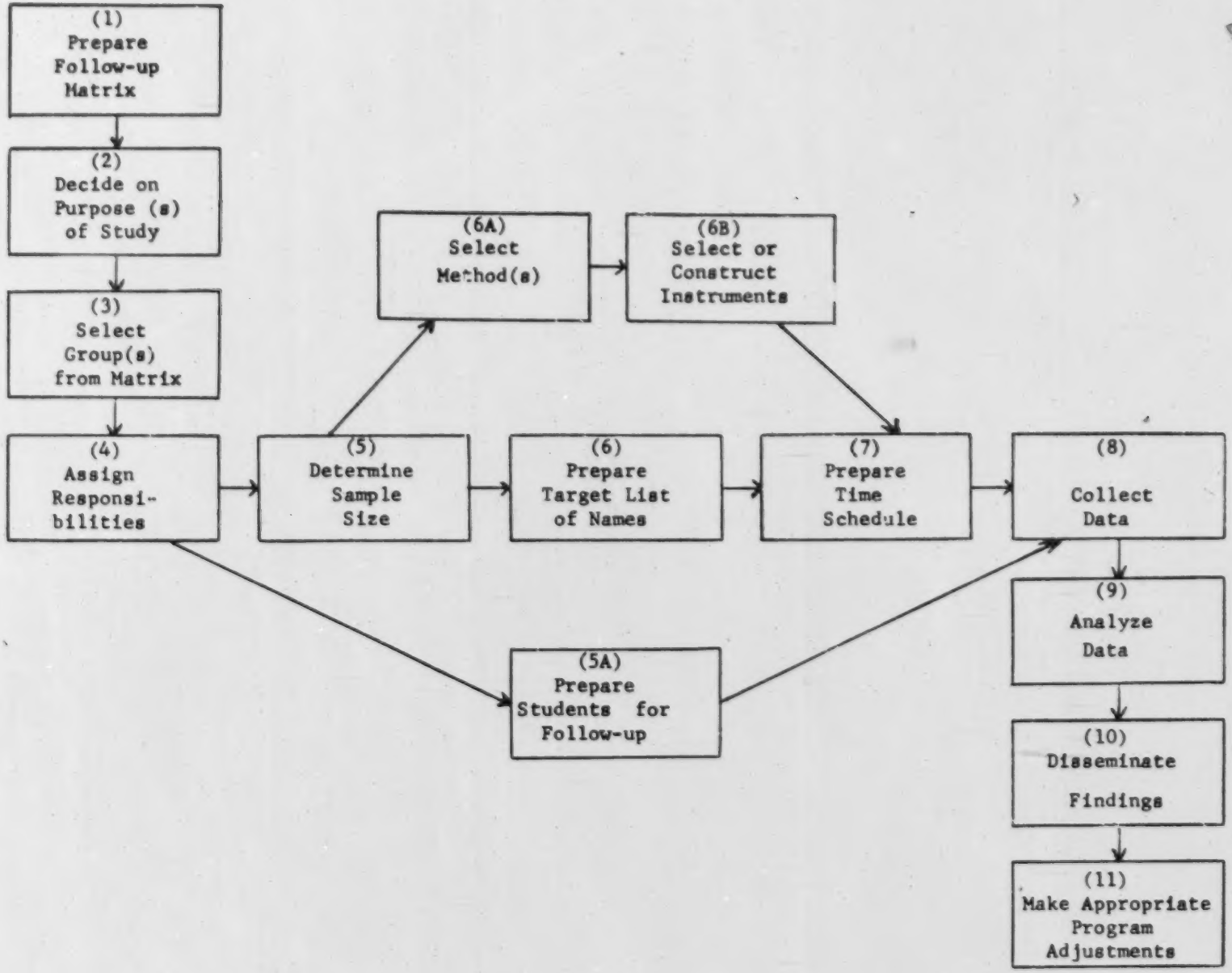
(2) Decide on Purpose(s) of Study

After observing the numbers in the various cells of the follow-up matrix, specific purposes of the study should be formulated. These purposes may or may not be dependent upon these numbers. Purposes may have been clearly delineated in a prepared detailed follow-up plan such as suggested in Section II-B-1, or they may be dictated by the numbers in the cells. For a particular semester, the purpose may be simply to obtain information of the CCOE45 form, or it may be to analyze in depth graduates of one or more particular programs, or it may be to obtain information regarding non-completors -- or a variety of other purposes.

(3) Select Group(s) from Matrix

If the purpose of the study is limited to obtaining data for completion of the Vocational Education CCOE45 form, certain specific cells in the matrix will have to be chosen (see Section II-C). If the purpose is program evaluation and planning, selection of groups will depend upon the purposes decided upon in step (2). (Some suggestions are offered in Section II-D).

GENERAL FLOWCHART FOR FOLLOW-UP


(1) Prepare Follow-up Matrix
(2) Decide on Purpose (s) of Study
(3) Select Group(s) from Matrix
(4) Assign Responsi-bilities
(5) Determine Sample Size
(6A) Select Method(s)
(6B) Select or Construct Instruments
(6) Prepare Target List of Names
(7) Prepare Time Schedule
(8) Collect Data
(5A) Prepare Students for Follow-up
(9) Analyze Data
(10) Disseminate Findings
(11) Make Appropriate Program Adjustments

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Notes on General Flowchart for Follow-up (continued)

(4) Assign Responsibilities

As indicated earlier, general responsibility for follow-up will depend upon situations existing at the particular college (or district). At this stage in the flowchart it is essential that one particular individual (or several, if the work is to be partioned by program or department) be designated to direct the details of the particular study. It is also important at this stage for the study director to know what resources will be available to him, in terms of budget, personnel, time and data processing facilities.

(5A) Prepare Students for Follow-up

One of the first assignments of the study director should be to determine what has been done in the way of student preparation for follow-up, assess its scope, and plan to remedy as much as possible any deficiencies he may find. It is to be hoped that after a semester or two, each college will have developed and implemented plans for follow-up preparation along the lines suggested in Section II-B-2. The study director should be aware of what has been done and realize that preparation is possible until data is actually collected from the students.

(5) Determine Sample Size

After the decision is made as to which cells in the follow-up matrix are to be studied, the next step in the study procedure is the determination of the number of students to be contacted -- whether all or only part of them. A discussion of the use of sampling in follow-up studies is presented in Appendix A of this manual, and its reading is recommended. Suffice it to say at this point that several factors must be weighed in arriving at a decision regarding sampling: (1) the overall scope of the study; (2) resources available; (3) the degree of generalization envisioned; (4) the number and variety of majors to be included. Before rejecting sampling techniques completely, it might be well to reflect on the fact that professional measurers of public opinion now can and do make statements with demonstrated precision about millions of people by obtaining data from only a few hundred.

(6) Prepare Target List of Names

Following the sampling decision, the study director now has two tasks to perform in the sequence leading to completion of the study: (1) select the medhod(s) to be used (see 6A below); and (2) prepare a target list of names of former students to be contacted. This list can (if desired) be prepared in the form of mailing labels, which can be designed to include codes indicating major, sex and/or other desired characteristics.

(6A-B) Select Method(s), Select or Construct Instruments

It is expected that in most studies at most colleges, mailed questionnaires will be the most feasible vehicle for obtaining data from former students. Other possibilities are telephone or in-person interviews, or combinations of any of the three. Following are some suggestions, gleaned from the literature, for preparing instruments and conducting a follow-up study by mail:

1. design the instrument to require the minimum possible time to complete
2. use as few words as possible in asking the questions
3. use familiar words, don't abbreviate, avoid long expressions
4. use two simple questions rather than one complex one
5. avoid hints as to desirable or expected answers
6. phrase questions to avoid academically or socially acceptable responses
7. place easiest to answer questions near the beginning
8. sequence questions to conform with respondent's way of thinking
9. plan method of tabulating results during questionnaire preparation
10. consider using double postcard for brief questionnaire
11. observe parallelism and exclusiveness in multiple-choice questions
12. make directions brief but complete and set off with distinctive lettering
13. state a deadline of about ten days after mailing
14. don't ask a question unless it clearly relates to the purpose of the study
15. indicate endorsement of the questionnaire by someone held in high esteem by the recipient
16. try out your questionnaire on a few people before you finalize it
17. send questionnaire so it will arrive early in the week
18. if a second mailing is performed, enclose another questionnaire
19. send any second mailings about two weeks after first mailing
20. enclose accompanying letter (except in double postcard mailing), briefly explaining the project and motivating the recipient to respond
21. enclose a self-addressed postage paid envelope
22. give prime consideration in designing the questionnaire to motivating its return, secondary consideration to data processing requirements
23. if deemed necessary, assure respondent that names will not be used in any published reports; however, most researchers agree that anonymity is not critical in response rates and it is not advisable to be able to make a second contact with non-respondents, thus requiring some kind of identification
24. use different color questionnaires for groups you want to study separately

(7) Prepare Time Schedule

After the target list of names is prepared and methods and instruments are decided upon, the study is ready to "go." It is suggested at this point that the study director prepare a rigid time schedule for the various steps in the study implementation. Deadline dates can be set in accord with the following time estimates.

ACTIVITY	DAY
1. mail questionnaire	1
2. mail second questionnaire (optional)	15
3. telephone non-respondents (optional)	25-30
4. collect responses, tally, and/or keypunch	3-30
5. analyze data	30-35
6. prepare and disseminate reports	36-40

Thus the study should be completed in a maximum of six weeks. Elimination of step 2 and/or 3 can reduce the time significantly but at some risk to generalizations from the study findings.

(8) Collect Data

Among the ways in which in follow-up studies differ from other studies is that the data arrive over a period of time. While having some obvious disadvantages, this spread of data collection over a time period offers the advantage of utilizing a more leisurely tallying procedure. If carefully thought out formats are prepared in advance for recording the data as it arrives, secretarial help can usually keep tallies up to date during slack periods. For this reason, manual data processing may be preferable to electronic data for tallying and analyzing follow-up responses. A generally satisfactory method is to use several blank questionnaires on which to mark tallies. Each blank questionnaire could be marked to identify desired sub-groupings. For example, if sub-groups are desired for sex (male and female), status (full-time, part-time) and age (under 21, 21-25, over 25) twelve (2x2x3) blank questionnaires should be used. For additional distinctions, different colored pencils can be used. For a larger number of breakdowns, punched cards and electronic data processing equipment are probably advisable.

(9) Analyze Data

After data collection (including tallying) is completed, the study director (or someone else) must take a good hard look at the data with a view towards answering these questions:

1. What concepts that we hold about our program(s) do the data confirm or deny?

(9) Analyze Data (continued)

2. What do the data tell us about our program(s) that we didn't already know?
3. What should be done as a result of the answers to questions (1) and (2)?

There are several possible approaches to analyzing the data. Again, the specific purposes of the study, its scope, limitations on time and resources are factors which must be considered. A simple tally may suffice one time, while a sophisticated statistical analysis may be appropriate another time. A thorough analysis in one office may be best at one time, while sending relevant questionnaires* to specific program heads for their analysis may be more appropriate at another.

It is suggested that highly sophisticated statistical analyses are seldom appropriate, and it is not essential that the study director be able to perform such analyses; however, competent statisticians can nearly always be found on a college staff and their consultation is advised before drawing inferences from "close" data that might have major impact upon a program.

(10) Disseminate Findings

As in other phases of follow-up, there are no hard and fast rules about dissemination of findings -- other than data in a deskdrawer or reports on a shelf are not very useful in evaluating or planning programs. The key point is that persons in position to make or influence program modifications must know the results of the study. For some, formal reports are preferred; for others, brief memoranda; for still others a simple presentation of the data in tabular or graphical form will best present the message.

(11) Make Appropriate Program Adjustments

This final step in the follow-up flowchart is the culmination of the efforts -- this is what it's all about. In one sense, this step is not part of the study, it's what should be done as a result of the study. In another sense, it is the study.

II-C Data for Vocational Education Follow-up Form

This section presents recommended procedures for obtaining specific information required for completion of the Vocational Education Follow-up Form (CCOE45). The form requests numbers of students who have completed their programs and have left college, numbers of students who have completed occupational programs but have left with marketable skills, and certain employment information about the program completors.

*It is almost always appropriate to send copies of written comments to program heads

Data for Vocational Education Follow-up Form (continued)

Using the concept that "completion means fulfillment of program requirements that enable a student to enter on a competitive level the occupation for which he has been trained,"* this model defines Class 1, 2, and 3 Graduates, Class 1, 2, and 3 Certificates, and Class 1 Achievers as program completors. Class 2 Achievers and Class 1 Partial Completors are considered to have left their programs with marketable skills.

The accompanying minimum questionnaire provides a vehicle for obtaining the required employment information from completors, and the accompanying flowchart outlines a set of procedures leading to completion of the form.

* p. 10, Instructions for Preparing Occupational Education Statistical Reports for 1972-73, Chancellor's Office, California Community Colleges.

OCCUPATIONAL STUDENT FOLLOW-UP QUESTIONNAIRE
(Minimum questions for CCOE45)

1. What is your present employment status?

_____ (1) working, full-time (30 hours per week or more)

_____ (2) working, part-time (less than 30 hours per week)

_____ (3) not working, looking for a job

_____ (4) not working, not looking for a job

_____ (5) military service

2. Which single statement best describes your present job?

_____ (1) in the occupation for which I prepared while in college.

_____ (2) in an occupation related to my college training.

_____ (3) in a field not related to my college training.

_____ (4) apprenticeship program (specify)_____.

_____ (5) not employed.

3. Are you attending college?

_____ (1) no

_____ (2) yes

College _____

Major _____

No. of units carried_____

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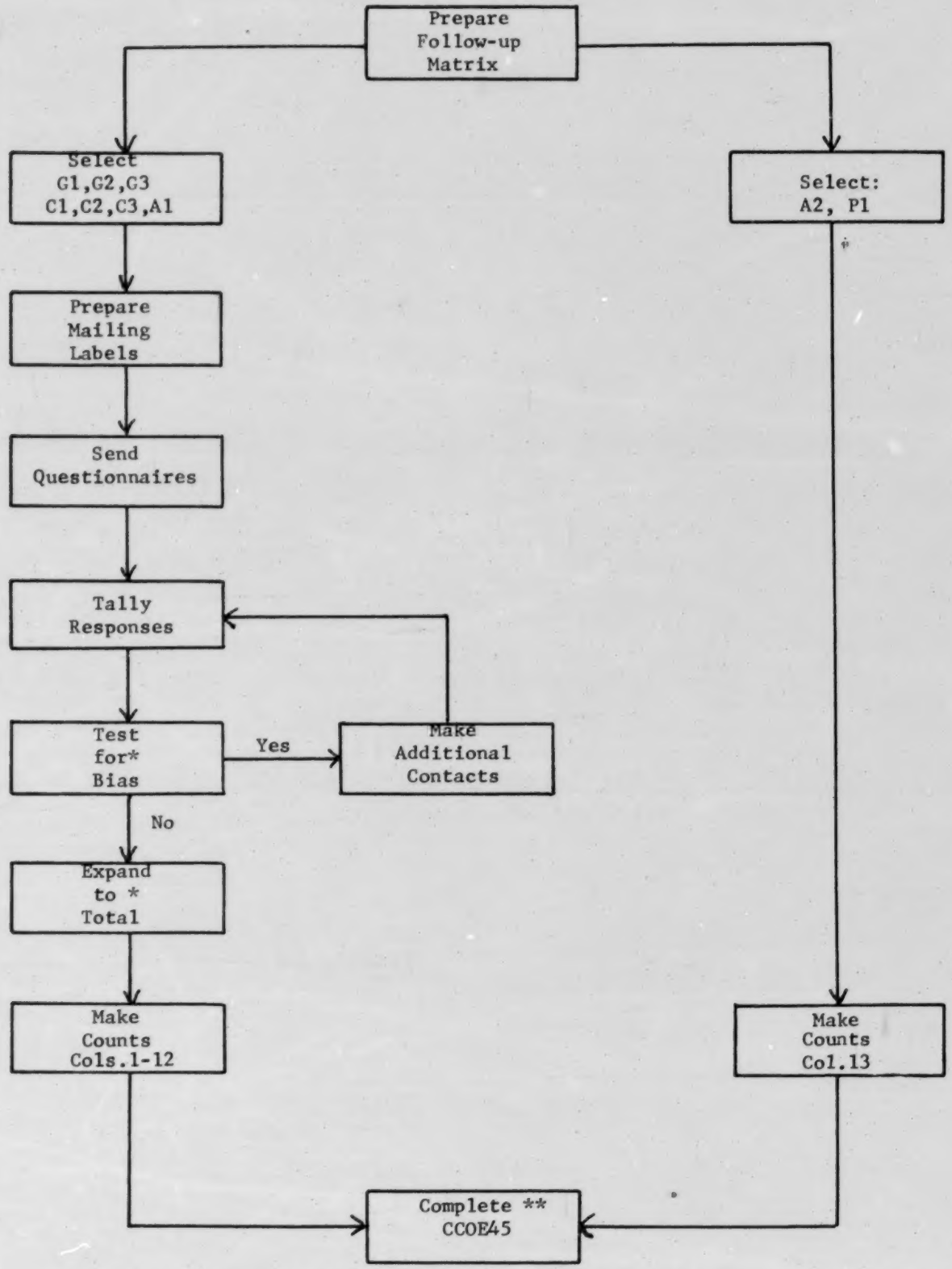
FLOWCHART FOR COMPLETING CCOE45



* See Appendix A, pp. 5-7 for suggested methods
** Repeat for each semester (quarter) and totals

Notes on Flowchart for Completing CCOE45

(1) Groups to be selected from Follow-up Matrix are those defined as Program Completors (G1, G2, C1, C2, C3, A1) and those with marketable skills (A2, P1). The latter requires counts only.

(2) The form requires figures for all occupational majors according to program. Sampling is usually not appropriate for this purpose. However, it is possible that much of the information can be obtained from students during the last few days of the semester. Thus, 100% mailing (or telephoning if desired) may not be required.

(3) It is recommended that mailing labels indicating codes for sex and major be prepared, and that the questionnaire be designed so that the mailing label will be returned attached to the completed questionnaire.

(4) Two to three weeks should be allowed for questionnaires to be returned. At this point some check should be made as to "bias" of responses. Some suggestions for testing response bias are given in the appendix, but a general look at distributions of sex, major, mailing areas will often be sufficient to conclude that the representativeness of the response is adequate. If bias clearly shows, it may be advisable to mail second questionnaires to and/or telephone non-respondents. Although subtle biases are difficult to detect, significant biases are usually not and responses should be at least cursorily examined before response figures are expanded to the total mailing.

(5) When assured that response bias is suitably low, percentage figures for the responses should be calculated and the products of those percents multiplied by the total numbers in the respective groups should be the numbers reported on the form.

II-D Data for Program Evaluation and Planning

In accord with the guidelines stated at the outset, follow-up approaches are suggested in this section for five clusters in the follow-up matrix as follows:

1. Graduates, Class 1, 2, 3; Certificates, Class 1, 2, 3; and Achievers, Class 1
2. Achievers, Class 2; Partial Completors, Class 1
3. Achievers, Class 3
4. Partial Completors, Class 2, 3
5. Non-Completors, Class 1, 2, 3

1. Graduates, Class 1, 2, 3; Certificates, Class 1, 2, 3; and Achievers, Class 1

These students were identified in an earlier section as "program completors" (for CCOE45).

In order to determine types of information about these students useful to occupational administrators, members of the consortium were requested to indicate the five most important (in order) questions they would like to ask occupational program completors. Questions were then resubmitted to the members, together with information as to their ranking, with a request that they be rated on a 0-100 importance scale. Following is an analysis of the results of that procedure.

"Consensus" Questionnaire for Occupational Graduates, Certificates, and Achievers

Questions were suggested by consortium members and then rated on an importance scale of 0 to 100. Figures given are median and "adjusted" range (extremes omitted) for the nine who responded. A high (low) median score indicates a high (low) level of importance. A large range indicates wide divergence of opinion, a small range indicates consensus.

Three questions are labeled "Essential," as they are required to produce data for the CCOE45 form. All had median scores of 100. Three others are labeled "Highly Desirable," each with median score of 95 of above. Four are labeled "Desirable" with median scores in the 80's. The remainder are labeled "Optional."

Essential Questions
(median,range)

1. (100,0) What is your present employment status?

_____ Working, full-time (30 hours per week or more)
_____ Working part-time (less than 30 hours per week)
_____ Not working, looking for a job
_____ Not working, not looking for a job
_____ Military Service

2. (100,10) Which single statement best describes your present job?

_____ In the occupation for which I prepared while in college
_____ In an occupation related to my college training
_____ In a field not related to my college training
_____ Apprenticeship program (specify)_____
_____ Not employed

3. (100,10) Are you attending college?

_____ No
_____ Yes

College_____
Major_____
Units carried_____

Additional questions for those employed

Highly Desirable:

4. (100,20) How well did your college occupational training prepare you for skills you need on your present job?

_____poorly _____fairly well ____ very well

5. (96,20) Do you feel that your college occupational training was important to you in getting your present job?

____not at all _____some ____a great deal

6. (95,30) What is your current rate of pay*?

_____$1.99 or less per hour
_____$2.00 - 2.99 per hour
_____$3.00 - 3.99 per hour
_____$4.00 - 4.99 per hour
_____$5.00 or more per hour

Desirable:

7. (88,50) Please name the three college courses that were of most help to you in your work.

_____ _____ _____

* monthly or weekly units may be preferable if part-time and full-time workers are kept separate.

Desirable Questions (continued)

8. (86,80) Please rate the following according to your college experience.

	Excellent	Average	Poor
Class instruction	_____	_____	_____
Help from instructor outside of class....	_____	_____	_____
Program planning assistance	_____	_____	_____
Vocational information available.....	_____	_____	_____
General opinion of college.....	_____	_____	_____

9. (80,27) Which one of the following was most helpful in assisting you in obtaining your first job after leaving college?

_____ Parents, friends, relatives
_____ The college
_____ Employment agency (private)
_____ Employment agency (public)
_____ Other (specify)_____

_____

10. (80,35) Were you employed prior to taking your work at college?

Yes_____ No_____

At a lower level? Yes_____ No_____
In the same level? Yes_____ No_____

Optional:

11. (75,30) How long did it take you to find your first job after leaving college?

_____ I had it before I left college
_____ A month or less
_____ One to three months
_____ More than three months

12. (75,60) Do you plan to continue your college education to a Bachelor's degree or higher?

_____ Already have Bachelor's degree
_____ Yes, will continue right away
_____ Yes, but later
_____ Probably not
_____ Definitely no

13. (70,60) Please name the three college courses (of two units or more) that were of least help in preparing for your job.

_____ _____ _____

Optional Questions (continued)

14. (70,60) If not employed in a field related to your occupational training, was your occupational training of value to you?

Yes_____ No_____

If yes, in what way?

15. (60,30) Do you think you will return to this or any college for additional training in order to advance on the job?

Yes_____ No_____ Not sure_____

16. (60,35) How many jobs have you held since leaving college?

_____ This one is my first
_____ Two _____ Three or more

17. (55,25) What was the most important reason you stopped attending college?

18. (50,50) How long do you expect to remain on your present job?

_____ Less than one year
_____ 1 - 2 years
_____ 2 - 5 years
_____ More than 5 years

19. (50,80) Would you be willing to complete a more detailed questionnaire?

Yes _____ No_____

20. (50,80) If not employed, would you like help in getting a job?

Yes_____ No_____

(Name and address of employer is considered optional as several respondents requested its omission)

It is suggested that the minimum questionnaire discussed in the preceding section be expanded to include the questions rated as "highly desirable" and others selected by the college.

It is also suggested that, where desirable and feasible, graduates and certificates who are continuing at the college (presumably for non-occupational courses) be included in this group.

"Consensus" Questionnaire (continued)

Also, any in-depth questionnaire should provide one or more "open-end" questions requesting comments regarding strength and weaknesses of the particular program and/or the college in general.

In line with the assumptions stated at the outset of this manual, it is appropriate that a large share of the college resources available for follow-up studies be directed toward the cluster just described. It should by no means be inferred that other groups in the follow-up matrix should receive no attention. To the contrary, it is essential in an overall follow-up plan that information be obtained from partial completors and non-completors.

Following are some suggestions for obtaining information about other clusters indicated at the beginning of this section.

2. Achievers, Class 2, Partial Completors, Class 1

   This group was defined (for the Voc-Ed form) to be those leaving an occupational program with marketable skills, depending upon the numbers involved, resources available and pertinence at the time, this group could be sent questionnaries similar to those used above.

   Questions relating to employment status, relevance of college preparation, and opinions as to strengths and weaknesses of the college program could produce useful information. However, these students left before completion of an occupational program and questions relating to reasons for this premature (apparently) leaving should surely be included.

   Although the two groups (Class 2 achievers and Class 1 partial completors) are not distinguished for reporting on the CCOE45 form, it may well be advisable to separate them for follow-up planning purposes.

3. Achievers, Class 3

   These non-continuing students completed one (or more) Priority D occupational courses. It is suggested that these students be contacted, possibly on a sampling basis, to determine reasons for non-attendance, opinions regarding college work, current activities and their relation to college work. It is possible that many of these students had no intention of pursuing a two year (or less) occupational major.

4. Partial Completors, Class 2, 3

   In this group are students who were classified as occupational majors but who left without completing any occupational courses (although completing some work). It is suggested that this group be contacted periodically, on a sampling basis, with questions designed to elicit reasons for non-completion of occupational courses.

"Consensus" Questionnaire (continued)

5. Non-Completors, Class 1, 2, 3

This group could prpbably justifiably be labeled "drop-outs," as they completed no work. They will probably be the most difficult to contact, but should not be ignored in the college plan for follow-up.

It is suggested that sampling is appropriate for this group, with occasional in depth interviews considered as a possible method for probing into reasons for non-completion and leads for possible improvement of the college program.

It should again be emphasized that the above clustering may not be the most appropriate one for a particular college at a particular time. It is strongly recommended that each college set up procedures for routinely producing the follow-up matrix and then designing a follow-up program dependent upon the numbers in the various cells in the matrix, as well as upon particular needs and resources of the college.

Epilogue

This manual has been addressed to the problem of short-range follow-up of community college occupational students and has considered only the students as sources of information. Inferences as to the value of either long-range follow-up or information from sources other than students should not be made as a result of these omissions. The omissions were made simply because short-range follow-up with students as information sources is clearly of immense value and, for whatever reason, has not been carefully done on a systematic basis at most colleges.

The system developed in the manual for identifying and classifying occupational students obviously cannot produce such information with 100% accuracy. It is the collective judgment of project consortium members, however, that errors will be minimal as compared to most other systems now in use at various colleges. This judgment needs to be tested, and users of S.A.M. are urged to make such tests as appropriate to their situation and report findings to any member of the project consortium.

It is the hope of the people involved in developing the model that it will be of assistance to the colleges, and not a burden. Comments and suggestions toward its improvement will be welcomed.

A P P E N D I C E S

A. Sampling in Follow-up Studies

B. Sample Instruments for Follow-up Preparation

1. In-Class Questionnaire

2. EXIT Interview Form

3. Follow-up Alert Letter

C. Members of Project Consortium

APPENDIX
SAMPLING IN FOLLOW-UP STUDIES

Two of the knottiest problems in follow-up studies are: (1) guaranteeing that those responding in the study are representative of the population under study, and (2) cost (in terms of money, personnel and time) of making contacts with former students and obtaining appropriate information from them.

A carefully structured sampling plan can often help in solving both of these problems. The following pages offer some suggestions for use of sampling in conducting follow-up studies.

Some important points to note:

(1) For any sample to be representative of a population within desired probability limits, the sample must be selected randomly, i.e., every member of the population being sampled must have the same chance of being selected in the sample.

(2) Sample size is much more important than what percent it is of the population. A ten percent sample of ten is meaningless; a ten percent sample of 100,000 is wasteful. Note (from Table p. 3), for example, that a random sample of 600 gives results within ± 4%, even if the population were infinitely large. But also note, that for a small population of 100, the same accuracy requires a sample of 86.

(3) Simple random sampling(see p. 4) is probably the most appropriate method for most follow-up studies.

(4) Proportional stratified random sampling (see p.8) is useful in certain studies where a large heterogeneous group can be easily partioned into subgroups, each of which is internally homogeneous (relative to the total).

Some advantages of stratified sampling are:

(a) provides data of known precision* for subpopulations
(b) often more convenient to administer
(c) may bring about gain in precision of estimates for the whole population

Stratified sampling can occasionally be useful in broad scale follow-up studies, but its usefulness is severely limited when many differing majors are to be included, as is usually the case in occupational follow-up.

* precision will be less, however, as samples are smaller

Appendix (continued)

(5) Tables on the following pages apply to data involving attributes (not measurements) of people involved (e.g., percent male, percent working, percent working in field, percent giving favorable response). If data involves measurement and produces averages (e.g., average monthly salary, average number of hours per week employed, average on a rating scale), sample sizes can be even lower than those indicated.

The items listed below are presented on the following pages:

Table for Selecting Sample Size

Procedure for Selecting a Random Sample

Procedure for Identifying Follow-up Response Bias

Table for "Check" Questions

Procedure for Extrapolating Sampling Results to Entire Population

Procedure for Selecting a Proportional Stratified Random Sample

TABLE FOR SELECTING SAMPLE SIZE

If your population is of size	and you want to guarantee* that your sample percent reflects your population percent within ±									then you should use a sample of size
	±1%	±2%	±3%	±4%	±5%	±6%	±7%	±8%	±9%	±10%
100	99	97	92	86	80	73	67	61	55	49
150	148	142	132	121	108	97	85	76	67	59
200	196	185	169	151	132	115	99	86	75	65
250	244	227	203	177	152	130	110	94	81	70
300	291	267	235	201	169	142	119	101	85	73
350	338	306	264	222	184	152	126	106	89	76
400	385	343	291	241	196	161	132	110	92	78
450	430	379	317	258	208	168	137	113	94	80
500	476	414	341	273	218	174	141	116	96	81
600	565	481	385	301	235	185	148	121	100	83
700	653	542	423	324	249	194	154	124	102	85
800	739	601	458	343	260	201	158	127	104	86
900	823	655	489	361	270	206	161	129	105	87
1000	906	706	517	376	278	211	164	131	106	88
1200	1067	801	565	401	292	219	169	134	108	89
1400	1222	885	606	421	302	225	172	136	110	90
1600	1372	961	641	437	310	229	175	138	111	91
1800	1516	1029	670	451	317	233	177	139	112	92
2000	1656	1092	696	462	323	236	179	140	112	92
2500	1984	1225	748	485	333	242	182	142	114	93
3000	2286	1334	788	501	341	245	184	143	115	94
3500	2566	1425	818	513	347	248	186	144	115	94
4000	2824	1501	843	522	351	251	187	145	116	94
4500	3065	1566	863	530	354	252	188	146	116	95
5000	3289	1623	880	536	357	254	189	146	116	95
6000	3693	1715	906	546	362	256	190	147	117	95
7000	4049	1788	926	553	365	257	191	147	117	95
8000	4365	1847	942	559	367	259	192	148	117	95
9000	4647	1896	954	563	369	260	192	148	118	96
10000	4900	1937	965	567	370	260	193	148	112	96
15000	5856	2070	997	578	375	263	194	149	118	96
20000	6489	2144	1014	583	377	264	195	149	118	96
25000	6939	2191	1024	587	379	264	195	150	119	96
Infinitely large	9604	2401	1067	600	384	267	196	150	119	96

For example, if you have a population of 5,000 people and you want the sample percent to be within 4% of the true population value, you should use a sample size 536.

* odds 19 to 1

SUGGESTED PROCEDURE FOR SELECTING A RANDOM SAMPLE

1. Determine the sample size desired (see Table).

2. Assign a number to each member of the population.

3. Divide the population size by the sample size and round down to nearest whole number, obtaining the "skip" number.

4. Select a "start" number (smaller than or equal to the "skip" number) by random procedure (e.g., take the next to the last digit of your telephone number).

5. Draw the sample by selecting the person assigned the start number and succeeding persons assigned numbers obtained by successively adding the "skip" number.

   Example:

   It is decided that sampling is appropriate for a population of 3,500 and accuracy is desired within $\pm$ 4%. From the table, the sample size is determined to be 513. Skip number is $3500 \div 513 = 6$. Take start number to be 5. Sample consists of those with numbers 5, 11, 17, 23, 29, 35, ... (every 6th until 513 obtained).

SUGGESTED PROCEDURE FOR IDENTIFYING FOLLOW-UP RESPONSE BIAS
(Mail or Telephone)

1. Include two or three "check" questions* for which total population percentages are known, e.g., sex, ethnic, high school source, etc.

2. Compare response percents with population percents on "check" questions.

3. If "check" question differences are all within allowable limits (see Table), assume response sample is representative.

4. If one or more "check" question differences are outside allowable limits, response sample cannot be assumed representative and you should do one of the following:

   (a) make further efforts at increasing number of responses

   (b) abandon the project

   (c) prepare report, clearly indicating the nature of the bias and indicating that findings can not be generalized

*It is of course best to use as "check" questions characteristics which are related to those which are of concern in the follow-up study. The "check" procedures indicated do not guarantee lack of bias, but should aid in reducing it.

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TABLE FOR "CHECK" QUESTIONS

If you mailed to (or phoned) this many people	and your response rate is 10%	20%	30%	40%	50%	60%	70%	80%	90%
50									5
100								5	3
150							5	4	3
200							5	3	2
250						5	4	3	2
300						5	4	3	2
350					5	4	3	3	2
400					5	4	3	2	2
450					5	4	3	2	2
500				5	4	4	3	2	1
600				5	4	3	3	2	1
700				5	4	3	2	2	1
800			5	4	3	3	2	2	1
900			5	4	3	3	2	2	1
1000			5	4	3	3	2	2	1
1200			4	3	3	2	2	1	1
1400		5	4	3	3	2	2	1	1
1600		5	4	3	2	2	2	1	1
1800		5	4	3	2	2	2	1	1
2000		4	3	3	2	2	1	1	1
2500		4	3	2	2	2	1	1	1
3000	5	4	3	2	2	1	1	1	1
4000	5	3	2	2	2	1	1	1	1
5000	4	3	2	2	1	1	1	1	0
10000	3	2	1	1	1	1	1	0	0

RESPONSE NOT ADEQUATE

then you can be reasonably* confident your response is unbiased if differences on your "check" questions are not greater than

-* odds are 19 to 1

Example:

If total mailing is known to be 56% male, and you sent 250 questionnaires, a 60% response can be assumed to be unbiased (at least as far as sex is concerned) if the respondent percent male shows between 51% and 61% male (56%±5%).

PROCEDURE FOR EXPANDING FROM RESPONSE SAMPLE TO POPULATION

1. Compare population and response sample values on "check" questions. If <u>any</u> differences are outside allowable limits, extrapolation should not be made.

2. If response rate is less than 80%, "oversampling"* is recommended, e.g., additional people should be contacted. To determine the number of additional contacts, divide the original sample size by the response rate (to get total necessary) and subtract the number of responses already obtained.

   Example:

   If a sample of 600 produced a 75% response,

   a total of $\frac{600}{.75} = 800$ (or an additional 200)

   people should be contacted.

3. If "check" questions indicate lack of bias and number of responses is increased by "oversampling" (if necessary) percents and averages calculated in sample can be considered reliable estimates of the true population values.

* This obviously can not be done if initial contacts were made to the entire population. Also, for low response rates, the recommended oversampling can be rather large. Compromises based on judgment and experience will have to be made.

PROCEDURES FOR SELECTING A PROPORTIONAL STRATIFIED RANDOM SAMPLE

1. Decide on the stratification variables.
   e.g., 4 levels of major, received (or not) Associate Degree

2. Partition the population into appropriate strata.
   e.g., population of 5,000 stratified on degree and major might be:

Degree ?	Occup. Cl. 1	Occup. Cl. 2	Occup. Cl. 3	Non-Occup.	Totals
Yes	600	800	300	1300	3000
No	600	500	200	700	2000
Totals	1200	1300	500	2000	5000

3. Determine the proportion of the population in each stratum by dividing the number in the stratum by the total number in the population. e.g.,

Degree ?	Occup. Cl. 1	Occup. Cl. 2	Occup. Cl. 3	Non-Occup.	Totals
Yes	12	16	6	26	60
No	12	10	4	14	40
Totals	24	26	10	40	100

(figures now indicate percents)

4. Determine <u>total</u> sample size desired (from table or other considerations) e.g., assume in this example sample of 400 desired.

5. Determine stratum sample sizes by multiplying total sample size by percents obtained in step 3.

Degree ?	Occup. Cl. 1	Occup. Cl. 2	Occup. Cl. 3	Non-Occup.	Totals
Yes	48	64	24	104	240
No	48	40	16	56	100
Totals	96	104	40	160	400

6. Select sample for each stratum, using random sampling procedures.

(Sample In-Class Questionnaire)

To the student:

The purpose of this questionnaire is three-fold: (1) to provide necessary information for funding purposes; (2) to provide the college information to help us better meet student needs, and (3) to be of assistance to you in career planning. If you have completed this form in another class, it is not necessary to complete another one.

When you later receive a follow-up questionnaire, we would appreciate your completing and returning it promptly. Thank you.

STUDENT PLANS FOR NEXT SEMESTER

Instructor_____
Course _____
Date_____

Name _____ College Major_____

PERMANENT address _____ _____ _____ _____
(Street) (City) (State) ZIP

Telephone Number _____

Indicate below relative (or friend) who will always know your address.

_____ _____ _____ _____ _____
(Name) (Street) (City) (State) ZIP

Please check (and complete) any of the following that are appropriate. (To the best of your knowledge at this time)

_____ I plan to return to this college next semester.
_____ I plan to transfer to _____ (college).
_____ I plan to work full-time next semester.

____ I am fairly certain I will be employed with (name and address of employer)
_____
_____

____ I think I may have a job but am not sure. (Name and address of prospective employer)
_____
_____

____ I have no prospects for employment at this time and I would appreciate assistance.

(Sample Exit Interview Form)

Student Withdrawal Form Date _____

Name _____ ID #_____

Permanent Address _____ _____ _____
(Address) (City) ZIP

College Major _____

Have you been employed this semester? No_____ Yes_____

1/4 time_____ 1/2 time_____ 3/4 time_____ full-time _____

Do you plan to return to this college? Yes_____ No_____ Not sure_____

Do you plan to transfer to a four-year college?

Yes_____ No_____ Not sure_____

How well do you feel this college served you?

excellently _____ adequately_____ poorly_____

Please check (one or more) reasons for your withdrawal:

_____ insufficient funds

_____ personal or family illness or accident

_____ transportation problem

_____ going to work full-time
(have you found a job yet? Yes____ No____)

_____ unhappy with schedule

_____ family moving away

_____ going to another school

_____ conflicting job hours

_____ not enough time to study

_____ personal, prefer not to state

_____ other (please describe)_____

_____

Please write any comments on the back of this sheet.

(Sample Follow-up Alert Letter)

Dear _____:

Our records indicate that you are no longer in attendance at this college.

We hope your stay has been worthwhile, and hope you will return whenever our offerings can be of service to you.

One of our most important sources of information to assist us in planning programs which can be of service is feedback from former students like yourself. From time to time we send questionnaires to our former students to obtain this type of information, and we hope that when you receive one of our requests you will respond promptly.

Meanwhile, we should like to ask that you keep us posted on any change of address.

We wish you well in your future endeavors.

Sincerely,

(possibly enclose Change of Address form)

UNIVERSITY OF CALIF.
LOS ANGELES

NOV 15 1974

CLEARINGHOUSE FOR
JUNIOR CO[illegible]
INFOR[illegible]

CALIFORNIA COMMUNITY COLLEGE FOLLOW-UP PROJECT, 1973-74

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